5th Grade Mathematics Program of Studies/Core Content for Assessment

Academic Expectation 2.9: Students understand space and dimensionality concepts and use them appropriately and accurately.

Geometry: *Shapes and Relationships*

<table>
<tr>
<td>Program of Studies
M-5-GM-1
Students will identify and model basic two-and three-dimensional shapes by appearance and in different orientations (i.e., turn models different ways).

M-5-GM-2
Students will measure and construct angles to the nearest degree.

M-5-GM-3
Students will classify angles as acute, obtuse, or right.</td>
<td>MA-E5-3.1.1
Students will identify, describe, and give examples of basic geometric elements and terms (points, segments, lines [perpendicular, parallel, intersecting], rays, angles [acute, right, obtuse], sides, edges, faces, vertices, radius, and diameter).

MA-E5-3.1.2
Students will identify, describe, and give examples of basic two-dimensional shapes (circles, triangles [right, equilateral], all quadrilaterals, pentagons, hexagons, octagons), and will use these shapes to solve real-world and/or mathematical problems.

MA-E5-3.1.3
Students will describe and give examples of basic three-dimensional shapes (spheres, cones, cylinders, pyramids, cubes, triangular and rectangular prisms), and use these shapes to solve real-world and/or mathematical problems.

MA-E5-3.1.4
Students will identify and describe congruent and similar figures in real-world and/or mathematical situations.</td>
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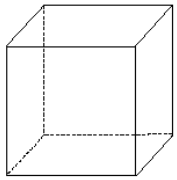
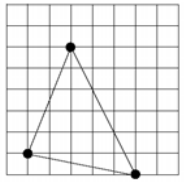
<td>Examples of student activities that may demonstrate understanding:
• Identifying attributes of two- and three-dimensional shapes.
• Using protractors or angle rulers to create and measure angles.
• Using illustrations to compare and contrast squares and rectangles.
• Folding circular paper to create various geometric figures and to understand different geometric terms.
• Creating symmetrical designs using pattern blocks and indicating lines of symmetry.
• Classifying geometric shapes into two- or three-dimensional figures and tell how shapes in each dimension are alike or different.</td>
<td> 
Released Items
Use the figure at left to answer Question 2.
2. How many edges does the figure have?
a. 6
b. 8
c. 12
d. 16 (MA-E5-3.1.1)

 
6. Sometimes shapes are congruent to one another.
a. On a grid, draw a shape that is CONGRUENT to the shape above. Label the congruent shape with a “C.”
b. Draw a shape that is NOT CONGRUENT to the shape above. Label the not congruent shape “NC.”
c. Explain why the CONGRUENT shapes are congruent.
d. Explain why the NOT CONGRUENT shape is not congruent. (MA-E5-3.1.4)</td>
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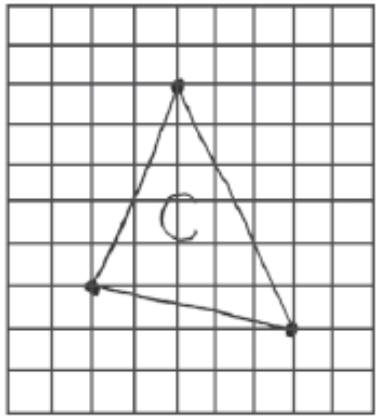
Annotated 4-Point Student Response for Question #6

a.



Student draws shape that is congruent to the one given. (1 point)

B.

Student draws shape that is not congruent to the one given. (1 point)

C. They are congruent because congruent means that they are the same size and shape and they are the same size and shape.

Student clearly explains why the congruent shapes are congruent. (1 point)

D. They are not congruent because not congruent means that they are not the same size and shape and they are not the same size and shape.

Student clearly explains why the not congruent shape is not congruent. (1 point)

Total points: 4

Overall, the student demonstrates a comprehensive understanding of the concept of congruence. The student provides two correct drawings and clearly explains why each is congruent or not congruent.

An effort has been made to reproduce the sample student papers as closely as possible to the original handwritten copy, including any grammatical errors in usage. Scores are given based on evidence of relevant content knowledge only. Spelling and grammatical errors have no impact on scores as long as the response is understandable. Writing skills such as spelling and grammar are evaluated as one component of holistic scoring in on-demand writing tests administered at grades 4, 7, and 12.